

REMARKS

At the time of the Office Action dated January 17, 2003, claims 1-7 were pending and rejected in this application. Claims 1 and 4 have been amended to recite that tempering is performed at a tempering temperature of at least 250°C, consistent with Table 2 on page 15 of Applicants' disclosure. Applicants submit that the present Amendment does not generate any new matter issue.

Initially, Applicants note that the Examiner cited U.S. Patent No. 6,197,128 as U.S. Patent No. 6,179,128 in the Notice of References Cited (PTO-892). As such, Applicants respectfully request that the Examiner clarify the record by reissuing the Notice of References Cited with this patent properly listed.

CLAIMS 1 AND 3-7 ARE REJECTED UNDER 35 U.S.C. § 102 AS BEING ANTICIPATED BY MURAKAMI ET AL., U.S. PATENT NO. 5,413,643 (HEREINAFTER MURAKAMI)

In the fifth enumerated paragraph of the Office Action, the Examiner asserted that Murakami discloses the invention as claimed. This rejection is respectfully traversed.

Initially, Applicants note that claims 1 and 4 have been amended to recite that tempering is performed at a tempering temperature of at least 250°C. As admitted by the Examiner on page two of the Office Action, Murakami only discloses tempering at 220-240°C. The tempering temperature is relevant to the dimensional stability at a high temperature of the rolling bearing and is therefore an important factor for the bearing used in a high temperature environment.

Thus, Murakami fails to identically describe the claimed invention within the meaning of 35 U.S.C. § 102.

In the statement of the rejection, the Examiner asserted that the non-disclosure in Murakami of P, S, Al, Ti, O, and N correspond to the ranges for these elements recited in the claims. Specifically, the Examiner appears to believe that the non-disclosure by Murakami of a range for an element corresponds to the disclosure of "0 wt%" for that element. In this regard, Applicants respectfully disagree.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the identical disclosure of each element of a claimed invention in a single reference. However, Murakami has not identically disclosed the claimed ranges for P, S, Al, Ti, O, and N. The Examiner is not free to assume that the non-disclosure of a particular element equates to that particular element not being present. Unless otherwise stated, a patent disclosure is not an exhaustive list of only those elements that can be present. Instead, a patent disclosure describes the claimed invention so that one having ordinary skill in the art can make or use the invention. As such, the Examiner cannot infer a reference teaches the lack of an element just because the element is not disclosed by that reference.

Although not explicitly stated as such, the Examiner's argument appears to be: "because ranges for elements P, S, Al, Ti, O, and N were not disclosed, then Murakami inherently discloses that the range for these elements are zero." Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a

given set of circumstances is not sufficient to establish inherency.¹ To establish inherency, the extrinsic evidence must make clear that the missing element must necessarily be present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.² The Examiner did not discharge the burden of indicating where in the prior art the lack of mention of an element or a range for an element equates to 0 wt% appears. Thus, the Examiner has not established that these limitations are inherently disclosed by Murakami.

With regard to claims 5-7, Applicants respectfully submit that the Examiner's reliance upon column 2, lines 50-56 of Murakami is misplaced. The citation referred to in Murakami by the Examiner does not teach a secondary quenching or an intermediate annealing, as respectively recited in claims 5 and 6. Instead, this citation is only directed to a first quench-hardening and a first high-temperature tempering. Thus, Murakami fails to identically describe the features recited in claims 5-7.

The above argued differences between the invention defined in claims 1 and 3-7 and the disclosure of Murakami undermine the factual determination that Murakami identically describes the claimed invention within the meaning of 35 U.S.C. § 102. Applicants, therefore, respectfully submit that the imposed rejection of claims 1 and 3-7 under 35 U.S.C. § 102 for lack of novelty as evidenced by Murakami is not factually viable and, hence, solicit withdrawal thereof.

¹ In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 212 USPQ 323, (CCPA 1981).

² Finnegan Corp. v. ITC, 180 F.3d 1354, 51 USPQ2d 1001 (Fed. Cir. 1999); In re Robertson, 169 F.3d 743, 49 USPQ2d 1949 (Fed. Cir. 1999); Continental Can Co. USA v. Monsanto Co., 20 USPQ 2d 1746 (Fed. Cir. 1991); Ex parte Levy, 17 USPQ2d 1461 (BPAI 1990).

**CLAIMS 1 AND 3-4 ARE REJECTED UNDER 35 U.S.C. § 102 AS BEING ANTICIPATED BY
MAEDA, U.S. PATENT NO. 6,197,128**

In the sixth enumerated paragraph of the Office Action, the Examiner asserted that Maeda discloses the invention as claimed. This rejection is respectfully traversed.

As with Murakami, the Examiner has not identically disclosed in Maeda the claimed ranges for the elements P, S, Al, Ti, O, and N, and Applicants incorporate herein the arguments previously presented with regard to this issue. Furthermore, the Examiner has failed to establish that Maeda teaches or suggests performing a quenching step after carburizing or carbo-nitriding, as recited in independent claims 1 and 4. Notwithstanding the Examiner's assertion that the process inherently teaches a quenching step "because the temperature goes from 850°C to approximately 90°C, not all cooling processes are equivalent. For example, a cooling process can be: an anneal, a quench, an interrupted quench, or an austempering. Each of these processes differ in the manner in which a material is cooled and the microstructure that results from the process. As previously discussed by Applicants as to "inherent teachings," the missing element must necessarily be present to be inherently taught. The Examiner, however, has not established that the cooling must necessarily be with a quenching process. Thus, the Examiner cannot properly assert that the limitation would be inherently disclosed by Maeda. Applicants, therefore, respectfully submit that the imposed rejection of claims 1 and 3-74 under 35 U.S.C. § 102 for lack of novelty as evidenced by Maeda is not factually viable and, hence, solicit withdrawal thereof.

CLAIMS 1-7 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON MURAKAMI IN VIEW OF OCHI ET AL., EP 0933440 (HEREINAFTER OCHI)

In the eighth enumerated paragraph of the Office Action, the Examiner asserted that it would have been obvious to one having ordinary skill in the art to modify Murakami to limit the ranges for P, S, Al, Ti, O, and N, as taught by Ochi. This rejection is respectfully traversed.

Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. § 102 for lack of novelty based upon Murakami. Specifically, Murakami fails to teach or suggest that tempering is performed at a tempering temperature of at least 250°C. The secondary reference of Ochi does not cure the argued deficiency of Murakami. Accordingly, one having ordinary skill in the art would not have found the this limitation to be obvious. Applicants, therefore, respectfully submit that the imposed rejection of claim 1-7 under 35 U.S.C. § 103 for obviousness based upon Murakami in view of Ochi is not viable and, hence, solicit withdrawal thereof.

CLAIMS 1-2 AND 4 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON MAEDA IN VIEW OF OCHI

In the ninth enumerated paragraph of the Office Action, the Examiner asserted that it would have been obvious to one having ordinary skill in the art to modify Maeda to limit the ranges for P, S, Al, Ti, O, and N, as taught by Ochi. This rejection is respectfully traversed.

Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. § 102 for lack of novelty based upon Maeda. Specifically,

Maeda fails to teach or suggest performing a quenching step after carburizing or carbo-nitriding. The secondary reference of Ochi does not cure the argued deficiency of Maeda. Accordingly, one having ordinary skill in the art would not have found the this limitation to be obvious. Applicants, therefore, respectfully submit that the imposed rejection of claim 1-2 and 4 under 35 U.S.C. § 103 for obviousness based upon Maeda in view of Ochi is not viable and, hence, solicit withdrawal thereof.

**CLAIMS 1-3 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON
MAEDA ET AL., U.S. PATENT NO. 5,595,610 (HEREINAFTER MAEDA '610) IN VIEW OF
MITAMURA, JP 03-153842**

In the tenth enumerated paragraph of the Office Action, the Examiner asserted that it would have been obvious to one having ordinary skill in the art to modify Maeda '610 in view of Murakami to arrive at the claimed invention. This rejection is respectfully traversed.

As with Murakami and Maeda above, the Examiner has not identically disclosed in Maeda '610 the claimed ranges for the elements P, Ti and O, and Applicants incorporate herein the arguments previously presented with regard to this issue. Furthermore, the Examiner has not asserted that either Maeda '610 or Mitamura teach the claimed surface hardness of at least HRC 57 after the tempering process. Applicants also note that by teaching tempering at a temperature of about 170°C, Maeda '610 teaches away from the claimed invention.

Additionally, the Examiner's asserted motivation to combine Maeda '610 in view of Mitamura is illusory. The Examiner has not established that Mitamura teaches that tempering at

240-550°C "impart[s] to the steel a better high temperature life." In fact, the abstract of Mitamura is unclear as to what feature or combinations of features produce the asserted benefit of prolonged service life. Furthermore, the Examiner has not established why one having ordinary skill in the art would believe that tempering at 240-550°C would work for the material disclosed by Maeda '610. Materials having different combinations of elements react differently to temperature, which is one of the reasons why the ranges for elements are varied from one material to the next by the prior art. As such, a heat treatment that works for one combination of elements is unlikely to produce the same effect if used on a different combination of elements. The Examiner has not established that the benefit that results from tempering at 240-550°C, as taught by Mitamura, would produce a comparable benefit for the combination of elements disclosed by Maeda '610. Thus, it would not have been obvious to one having ordinary skill in the art to go against the teachings of Maeda (to limit the tempering to 170°C) based upon the teachings of Mitamura when there is no established benefit to do so.

As to claim 2, Mitamura teaches away from the claimed invention by teaching 3.0% of Mo, whereas the claimed invention recites at most 2.5% of Mo. As such, *assuming arguendo* that one having ordinary skill in the art were motivated to modify Maeda '610 in view of Mitamura, the claimed invention would not result, as Mitamura teaches using 3.0% of Mo.

**CLAIMS 1-3 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON
OCHI IN VIEW OF MITAMURA**

In the eleventh enumerated paragraph of the Office Action, the Examiner asserted that it would have been obvious to one having ordinary skill in the art to modify Ochi in view of Murakami to arrive at the claimed invention. This rejection is respectfully traversed.

Similar to the rejection of Maeda '610 in view of Murakami discussed above, the Examiner has not asserted that either Ochi or Mitamura teach the claimed surface hardness of at least HRC 57 after the tempering process. Again similar to the rejection of Maeda '610 in view of Murakami discussed above, the Examiner's asserted motivation to combine Ochi in view of Mitamura is illusory. The Examiner has not established that Mitamura teaches that tempering at 240-550°C "impart[s] to the steel a better high temperature life," and the abstract of Mitamura is unclear as to what feature or combinations of features produce the asserted benefit of prolonged service life. Furthermore, the Examiner has not established why one having ordinary skill in the art would believe that tempering at 240-550°C would work for the material disclosed by Ochi. Thus, any benefit that the Examiner can establish for tempering at 240-550°C, as taught by Mitamura, would not necessarily produce a comparable benefit for the combination of elements disclosed by Ochi. Thus, it would not have been obvious to one having ordinary skill in the art to modify Ochi in view of Mitamura when there is no established benefit to do so.

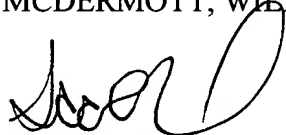
Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the

prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

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